

What is Claimed Is:

1. A magnetic recording medium comprising:  
a substrate having a distribution of pits or indentations therein to serve as servo-marks in the magnetic recording medium;  
a magnetic layer on the substrate;  
a protective overcoat on the magnetic layer; and  
a cross-linked fluoropolyether topcoat directly on the protective overcoat.
2. The magnetic recording medium according to claim 1, further comprising an underlayer on the substrate and the magnetic layer on the underlayer.
3. The magnetic recording medium according to claim 2, wherein the protective overcoat comprises carbon.
4. The magnetic recording medium according to claim 1, wherein the cross-linked fluoropolyether topcoat comprises a cross-linked perfluoropolyalkylether.
5. The magnetic recording medium according to claim 1, wherein the protective overcoat comprises one or more amorphous carbon layers and wherein the cross-linked fluoropolyether topcoat comprises a cross-linked perfluoropolyalkylether directly on the one or more amorphous carbon layers.
6. A magnetic recording medium, comprising:  
a magnetic layer on a substrate having a distribution of pits or indentations therein; and  
means for lubricating the magnetic recording medium.
7. A method of reading from or writing on the magnetic recording medium defined in claim 1, the method comprising:

sensing one or more of the servo-marks in the magnetic recording medium with a read/write head; and

moving the read/write head to a particular position on the magnetic recording medium in response to reading the one or more servo-marks.

8. A method of manufacturing a recording medium, the method comprising:

applying a fluoropolyether capable of cross-linking on the magnetic recording medium having a distribution of servo-marks therein; and

polymerizing the fluoropolyether to form a cross-linked fluoropolyether topcoat lubricant on the magnetic recording medium having the distribution of servo-marks therein.

9. The method according to claim 8, comprising:

texturing a surface of a non-magnetic substrate to form a distribution of pits or indentations therein to function as the servo-marks in the magnetic recording medium.

10. The method according to claim 8, forming a protective overcoat over a magnetic recording medium prior to applying the fluoropolyether.

11. The method according to claim 10, comprising polymerizing the fluoropolyether to a crosslinked perfluoropolyether lubricant directly on the protective overcoat.

12. The method according to claim 8, wherein fluoropolyether comprises wherein the fluoropolyether comprises a plurality of  $-(C_aF_{2a}O)_n-$  repeating units, wherein subscript a is independently in each repeating unit an integer of from 1 to about 10 and n is an integer from 5 to about 80.

13. The method according to claim 12, wherein fluoropolyether comprises one or more acrylate groups.

14. The method according to claim 8, comprising polymerizing the fluoropolyether by ultraviolet radiation.

15. The method according to claim 8, comprising applying a fluoropolyether capable of cross-linking on the magnetic recording medium by dip coating the magnetic recording medium.